Trait information: Person schemata or semantic tags?

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In three experiments, subjects made judgments about the descriptiveness of likable or unlikable trait adjectives for themselves or some other person. The manipulation of interest was whether the target person was identified before or after the trait, which determined whether the person schema was accessed before or after the semantic content of the adjective. In general, decisions about other-descriptiveness were made faster when the target person was presented before the trait, rather than when the trait was presented before the person, consistent with the idea that trait information is organized into person concepts. The target-order effect was not consistent for self-reference decisions.

Personal relevance has been shown to be an important determinant of memory (see Greenwald, 1981). For example, trait adjectives are remembered better after self-descriptiveness judgments than after synonymity judgments (e.g., Rogers, Kuiper, & Kirker, 1977), and better after self-reference decisions than after decisions about other people (e.g., Kuiper & Rogers, 1979). Furthermore, access to personally relevant information is often faster than is access to information about other materials (e.g., Keenan & Baillet, 1980).

The manner in which personal-relevance information is stored in memory is not clear. Markus and Sentis (1982) considered two extremes for the storage of trait information, and although other schemes may be considered, these pure cases illustrate the range of the conceptions and their implications for memory functioning (see also Wyer & Gordon, 1984). One extreme is that all appropriate trait adjectives are stored in separate structures, the "person concepts," each containing all that we know about a given person. In this case, a self-descriptiveness decision entails accessing the self structure and seeking the presence of the trait descriptor. At the other extreme, there is a knowledge structure for each trait, containing the general meaning of the term, with an associated feature-tag indicating the degree of self-descriptiveness, plus other less salient tags indicating descriptiveness of various other people, social desirability, generality of the trait in the population, and so forth. Thus, a self-descriptiveness decision in this scheme would not require first accessing a separate self structure, and person concepts would not necessarily have to exist at all.

The present experiments examined a methodological feature that affects whether the person structure or the semantic content of the term is accessed first when making a self-descriptiveness decision. In the conventional procedure (e.g., Kuiper & Rogers, 1979), subjects are informed of the target person about whom the judgment is to be made before the trait is presented, so the person structure is accessed before the meaning of the word is determined. Although the results established with this target-first procedure are reasonable, it is possible that some results are specific to this methodology. At the least, it would be useful to obtain converging evidence by using an alternate procedure.

Methodologically, it is a simple matter to reverse the interrogation sequence, with the trait presented first, so that its semantic content is determined before any person structure or tag is examined. This comparison, target first versus word first, was the focus of the present experiments. The specific method that leads to faster times would be different for the two schemes noted above. For example, the person-concept view predicts that the target-first procedure would yield faster decisions than would the word-first procedure. That is, if memory is organized in terms of separate person concepts, then presenting the target first narrows the memory search very effectively to only one person, whereas knowing the word first still leaves the search process essentially at the beginning. However, if the other view is correct, with trait information organized by meaning-plus-tags, then the word-first procedure ought to be faster. In this case, knowing the word first drastically narrows the search process, so then the subject only needs to know which tag to check for, whereas knowing the person-tag provides no advantage until the specific trait is known. Both views expect a self-reference decision to be faster than other-reference, but for different reasons. The person-concept view assumes that the self-structure is better organized and more familiar, whereas the tag view assumes that the self tag is more salient than the tag for any other person. As a result, the two views cannot be differentiated just by the self-other comparison. Therefore, the critical question is whether the target-first or the word-first procedure leads to faster decisions per se.

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In an effort to discriminate between the two storage formats outlined above, three previous experiments compared target-first and word-first presentation with self-reference and other-reference decisions (Mueller, Thompson, & Davenport, 1984). The results indicated that other-reference decisions were faster with the target-first procedure, which is consistent with the person-concept view. However, self-reference decisions showed no consistent target-order effect. This might be construed as indicating that information about the self is stored both ways.

The present experiments were conducted to provide further evidence on this point. The previous studies always involved only two possible decisions about a word, self- or other-descriptiveness, which is a somewhat limited arrangement. Therefore, to provide further evidence on the general question and to extend this paradigm, the present studies involved three possible decisions.

EXPERIMENT 1

Method

Subjects. Twenty students from introductory psychology courses participated as subjects in return for extra credit in their courses. They were assigned at random to the two experimental conditions (target first and word first).

Materials. The items rated were 120 trait adjectives selected from the most meaningful subset of the N. H. Anderson (1968) norms. Half of the words had likability ratings above 4.27, and the others had likability ratings below 1.96, the two subsets being equated for meaningfulness ($m=3.66$ and 3.64, respectively). These were supplemented by 120 synonyms, selected from a thesaurus.

Procedure. One third of the words at each level of likability were evaluated by the subject as to the self-descriptiveness, one third were evaluated for other ("most students")-descriptiveness, and one third were involved in synonymity decisions (with half of these designed to yield a positive judgment). The decision process required for a given word was randomly selected and varied across subjects. The words were randomly ordered for presentation, with a different order used for each subject.

The materials were presented on a video monitor controlled by a microcomputer. In the target-first condition, the subject first saw a target ques-

tion, "Describes you?" or "Describes most students?" or "Is a synonym of (some word)?," which was followed 1 sec later by a trait adjective. In the word-first condition, an adjective appeared first, followed 1 sec later by the target question. In both cases, the screen was blanked between the presentation of the question and adjective. Subjects responded by pressing a key to indicate yes or no. Subjects were instructed to respond quickly, on the basis of a rapid first impression. The experimenter was not present during this phase, to allow less-inhibited responding. Each subject had six practice items before the actual test sequence began.[1]

Results

The results are plotted in the left-hand panel of Figure 1. The latencies for positive responses were analyzed in a target order × target question × likability design. There was a significant main effect of target [$F(2,36) = 13.77$], as synonym decisions were slower than other-descriptiveness decisions and self-reference decisions. There also was a significant order × target interaction [$F(2,36) = 5.59$], reflecting the fact that synonym decisions were most affected by target order. In terms of individual comparisons, the target order effect was significant for synonym decisions ($p < .01$), but not for other-reference ($p < .10$) or self-reference decisions.

Discussion

The results are in accord with the previous studies (Mueller et al., 1984), in that other-reference decisions were faster with the target first, consistent with the person-concept format, whereas the speed of self-reference decisions seemed unaffected by target order. As in the earlier experiments, the differences among the decisions actually were greatest for the word-first condition. That is, the advantage of self-reference over other-reference decisions was smaller for the conventional target-first procedure than for the word-first procedure, as was the advantage of decisions about people over the semantic decision.

It might seem odd that it matters which member of a synonym pair was presented first, but that is not what is actually reflected here. When a person was shown first, which decision was to be made followed, and the synonym alternative was revealed last. When a word was shown first, the decision to be made and the synonym alternative were revealed at the same time. This was done to be more analogous to the presentation mode when a person was known first, where a single word appeared
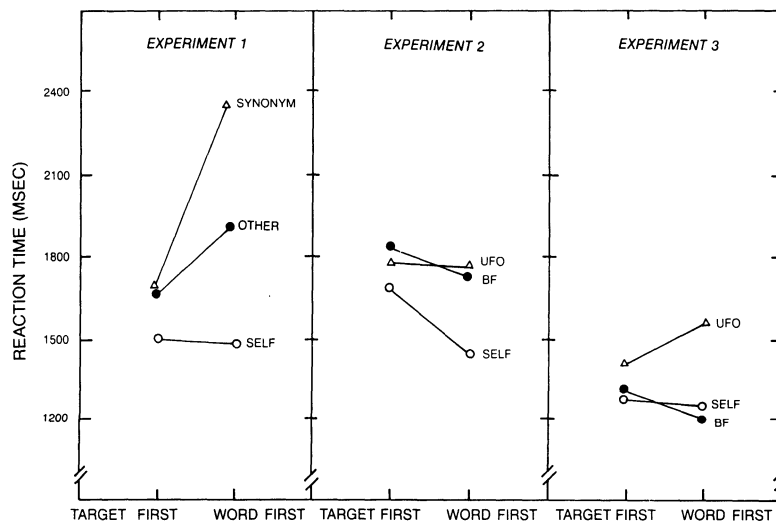

Figure 1. Average decision time by target-word order and target (BF = best friend, UFO = unfamiliar other) in Experiments 1–3.

last. However, it allows the subject to generate tentative synonyms, so it seems reasonable that the target-first procedure would also expedite the synonym decision (see also Moeser, 1983).

EXPERIMENT 2

Although Experiment 1 did involve three decisions, personality decisions were mixed with a nonpersonality decision, so Experiment 2 was conducted to examine three personality decisions. In particular, given that familiarity with the person used as a target has been shown to affect self-reference results (Bower & Gilligan, 1979; Keenan & Baillet, 1980), we used a familiar (best friend) and an unfamiliar other person as well as self-descriptiveness decisions.

Method

The target-first and word-first conditions in Experiment 2 each consisted of 16 subjects. The same 120-item word set was used, with items randomly assigned to one of three decisions: self, best friend, or unfamiliar other. For each subject, a specific unfamiliar target was randomly selected from a pool of 10 media personalities (e.g., Jane Fonda, Johnny Carson, Barbara Walters, Arnold Palmer, etc.). The appearances of the first and second components were separated by 1 sec, but the items remained together on the screen pending the subject's response.

Results

The center panel of Figure 1 shows the results of Experiment 2. The target main effect was significant [$F(2,60) = 4.81$], as self-reference decisions were made faster than best-friend (BF) or unfamiliar-other (UFO) decisions. This was more apparent when the word was shown first, but the target × order interaction was not significant ($F < 1$), nor was the order main effect ($F < 1$). In this experiment, there was an order × affect interaction [$F(1,30) = 10.84$]; likable adjectives led to significantly faster affirmations than did unlikable traits when the target was presented first (means = 1,491 msec. vs. 2,062 msec, $p < .05$), whereas reaction times for likable and unlikable items were comparable when the word was presented first (means = 1,563 msec vs. 1,659 msec). No other effects involving target order were significant.

EXPERIMENT 3

The main difference between Experiments 2 and 3 was that target order was a between-subjects factor in Experiment 2, but it was a manipulated within-subjects factor in Experiment 3.

Method

The procedure was the same as in Experiment 2, except that each of 20 subjects saw half of the 120 items in the target-first format and then the remainder in the word-first format, or vice versa. This was accomplished by having Items 1-60 follow the target-first procedure, for example, with a randomly selected 30 likable and 30 unlikable items randomly assigned (10 each) to self, BF, or UFO targets. Then a new set of instructions was provided at the midpoint, along with six practice items to illustrate the new procedure, followed by Items 61-120 in the

word-first format. Half of the subjects had the target-first, word-first sequence, whereas the remainder had the word-first, target-first sequence. The only other deviation from Experiment 2 was that each subject typed in the name of his/her best friend, and that name appeared on the screen for BF queries, whereas in Experiment 2 the target cue was a nonspecific label ("best friend"). Thus, the specific UFO was explicitly matched by a specific other, although this presumably occurred covertly in Experiment 2.

Results

The results for this experiment are shown in the right-hand panel of Figure 1. The order main effect was not significant [$F(1,18) = 2.21$], but the order × target interaction was significant [$F(2,33) = 9.55$]. In this case, decisions about self and a familiar other were unaffected by target-word order, but decisions about unfamiliar others were faster when the person was known first, consistent with person-indexed organization for other people but not for self.

CONCLUSIONS

Three experiments examined trait-descriptiveness decision speed as a function of order of presentation of the trait relative to the target person for the decision. The basic question was whether the target-word order would yield faster decisions than would the word-target order, or vice versa. The simplest prediction was that if trait information is organized by person concepts, then the target-word order should yield faster decisions than the word-target order, but if trait information is primarily indexed by trait meaning, then the reverse should be true.

Granted that there was some variation, it seems that other-reference decisions produced a fairly consistent outcome: knowing the person first led to faster judgments than when the trait was known first. This target-first advantage was obtained over a number of minor procedural changes, and has been observed in three other experiments (Mueller et al., 1984). The only deviation from this pattern was for the best-friend target, and, given the familiarity gradient (e.g., Bower & Gilligan, 1979; Keenan & Baillet, 1980) in such decisions, it seems reasonable to consider the best-friend other as a special case.

Accepting this as the collective result, then the outcome is consistent with the assumption that trait information is organized by person concepts rather than semantic content. If these data were the only evidence on this point, such a conclusion might be problematic. However, using a different procedure and a recall assessment, Herstein, Carroll, and Hayes (1980) similarly concluded that knowledge about people seemed to be organized more by person than by trait. The available data, both recall and decision speed, converge on the conclusion that trait information about other people is person-indexed.

On the other hand, the results are less consistent for self-reference. Inspection of the figure indicates no clear single pattern for target-word order, and the variation does not seem attributable to any manipulation across experi-

ments. When significant, self-reference decisions were actually slower when the target was first, the reverse of the pattern for target-word order in other-reference.

That self-reference and other-reference decisions had different results need not necessarily be a problem, in that the self-concept is often accorded a special status, either being more emotional or more highly developed. For one thing, this could be an instance of the "fan effect" (e.g., J. R. Anderson, 1981): as more is known about a topic, the harder it becomes to verify any single detail. By this argument, given the presumed detailed composition of the self-concept, knowing what is to be decided (word first) may actually be more optimal than knowing that the decision is to be about self (target first). This might be more convincing if the target-first self-reference decisions were also slower than target-first other-reference decisions, but if the self has special status, that strong requirement may be unrealistic or irrelevant. To some extent this same argument may be applied to the case of the "best friend" target.

Finally, although framed here in terms of schema-based conceptions, it seems reasonable to ask whether the target-order manipulation has the same significance for other views of person memory, specifically an associative model, such as that proposed by Srull, Lichtenstein, and Rothbart (1985). The central feature of this scheme concerns information that is congruent, incongruent, or irrelevant to the person, and in accord with this analysis, it is generally found that incongruent information is remembered best, followed by congruent and irrelevant. Would the expectation be different for target-first relative to a word-first format? The experimental mechanics would be different from those used here, but we doubt that there would be a strong effect. The magnitude of the congruity effect might be moderated with the word-first procedure, because "congruence" can only be determined after the target is known. In other words, because a determination of congruence depends on a specific target being known (top-down processing), the trait can sooner be identified as congruent or otherwise with the target-first procedure. However, as noted above in terms of the endorsement pattern here, the content of the person concept does not depend on the order of presentation; thus, whether the target occurs first or second, the congruency determination eventually will be the same.

REFERENCES

ANDERSON, J. R. (1981). Effects of prior knowledge on memory for new information. *Memory & Cognition, 9,* 237-246.
ANDERSON, N. H. (1968). Likableness ratings of 555 personality-trait words. *Journal of Personality & Social Psychology, 9,* 272-279.
BOWER, G. H., & GILLIGAN, S. G. (1979). Remembering information about one's self. *Journal of Research in Personality, 13,* 420-432.
BUSS, A. H. (1980). *Self consciousness and social anxiety.* San Francisco, CA: Freeman.
GREENWALD, A. G. (1981). Self and memory. In G. H. Bower (Ed.), *Psychology of learning and motivation* (Vol. 15, pp. 201-236). New York: Academic Press.
HERSTEIN, J. A., CARROLL, J. S., & HAYES, J. R. (1980). The organization of knowledge about people and their attributes in long-term memory. *Representative Research in Social Psychology, 11,* 17-37.
KEENAN, J. M. & BAILLET, S. D. (1980). Memory for personally and socially significant events. In R. S. Nickerson (Eds.), *Attention and performance* (Vol. 8, pp. 651-669). Hillsdale, NJ: Erlbaum.
KUIPER, N. A., & ROGERS, T. B. (1979). Encoding of personal information: Self-other differences. *Journal of Personality & Social Psychology, 37,* 499-514.
MARKUS, H., & SENTIS, K. (1982). The self in social information processing. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 41-70). Hillsdale, NJ: Erlbaum.
MOESER, S. D. (1983). Levels of processing: Qualitative differences or task-demand differences? *Memory & Cognition, 11,* 316-323.
MUELLER, J. H., THOMPSON, W. B., & DAVENPORT, J. S. (1984, May). *Order of access to semantic content and self schema.* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.
ROGERS, T. B., KUIPER, N. A. , & KIRKER, W. S. (1977). Self-reference and the encoding of personal information. *Journal of Personality & Social Psychology, 35,* 677-688.
SRULL, T. K., LICHTENSTEIN, M., & ROTHBART, M. (1985). Associative storage and retrieval processes in person memory. *Journal of Experimental Psychology: Learning, Memory, & Cognition, 11,* 316-345.
WYER, R. S., & GORDON, S. E. (1984). The cognitive representation of social information. In R. S. Wyer and T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, pp. 73-150). Hillsdale, NJ: Erlbaum.

NOTE

1. There were three additional phases to each experiment: a free recall test, a target-trait matching test, and the Buss (1980) Self-Consciousness questionnaire. However, the first two do not directly bear on the target-order question, and the latter showed no significant correlations over the three experiments; thus, these data will not be discussed further.